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State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF HAZARDOUS WASTE MANAGEMENT

Michele M. Putnam
Deputy Director
Hazardous Waste Operations

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(609)633-1408

Lance R. Miller
Deputy Director
Responsible Party Remedial Action

4/6/1989
(DATE)

MEMORANDUM

APR 0 6 1989

TO: Distribution List OSK

THROUGH: Dhruva Kanjarpane, P.E., Section Chief
Bureau of Federal/~~State~~ Case Management

FROM: Edgar G. Kamp, P.E., Case Manager
Bureau of Federal/~~State~~ Case Management

CASE: L.E. CARPENTER

CASE COMPONENT: RI/FS

SUBJECT: RECOVERY OF FLOATING XYLENE

The attached type of document on the above named facility is for your:

[X] Review and comment

[ ] Information and/or file

[ ] Action

[ ] Other

Should you have any questions or if you are unable to meet the due date, please contact me at 3-1455.

Due Date: 4-21-1989

Activity Code: 3UC

Attachment

345976

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			*Comments received by Case Manager on
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[ ]	W. STORM	Technical Coordinator BEERA/Division of Hazardous Site Mitigation	
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*Document received from EPA/RP on
Scheduled Actual

*Response sent to EPA/RP on

*This information is filled out by the Case Manager and a copy of the completed memorandum is forwarded to the Section Chief and MIS.

c. Section Chief (no attachments)
MIS (no attachments)

GeoEngineering, Inc.
Consultants in Groundwater Control

100 Ford Rd. Denville, N.J. 07834 (201) 625 0700

March 30, 1989

BUREAU OF
FEDERAL CASE MANAGEMENT
APR 03 1989

M.A. Hanna Company
1301 East 9th Street
Suite 3600
Cleveland, OH 44114-1824

ATTN: Richard E. Hahn

SUBJ: L.E. Carpenter, Wharton, NJ
Recovery of Floating Xylene

Dear Mr. Hahn:

In response to the concerns voiced by the New Jersey Department of Environmental Protection (NJDEP) during our February 16 meeting in Trenton, New Jersey, we have prepared the following proposal. The NJDEP is concerned that the present AUTO-SKIMMER operations are not efficiently recovering xylene floating on the water table. As indicated during the February 16 meeting, the NJDEP is requiring that M.A. Hanna increase the rate of xylene recovery.

Overview

Our June 1987 proposal recommended a system that would skim xylene floating on the water table in three wells. When skimming operations no longer controlled the xylene plume, the system would be enhanced by water table depression pumping to create a gradient toward the recovery well and increase xylene recovery.

At the time of the 1987 proposal, technology dictated that pumping from all three wells would be in response to the water level controlled in one well. The disadvantage of the design was that the water table depression determined as optimum for one well would not necessarily have allowed for maximum efficiency of xylene recovery in the other two wells. However since 1987, the technology has improved to enable separate control of water table depression in each well. This permits efficient recovery of xylene at each location and eliminates the possibility of recovering too little xylene or too much groundwater from any of the wells.

Scope of Work

As stated in our 1987 proposal, we will furnish and install the Selective Oil Skimming System (SOS), manufactured by Clean Environment Engineers of Emeryville, California, as a replacement for the presently operating AUTO-SKIMMER. The system will be installed in three monitor wells: MW-6, MW-7 and MW-10. Initially, the system will only skim floating xylene from the water table so as not to generate groundwater requiring disposal or treatment. When it is determined that skimming alone is no longer effective, the system will be switched to groundwater pumping to create a gradient toward the recovery wells. No additional equipment will be necessary to switch the operational mode of the system.

During the skimming operations and prior to switching to water table depression pumping, we will extract a sample of the ground water from one of the wells in which the system is operating and analyze it for chemical properties pertinent to treatment system design.

Based on pumping tests performed at the recovery wells in October 1983, it is estimated that the recovery system will discharge a total of 21,600 gallons of water per day from three wells. The intake of the groundwater pump will be set near the bottom of the well. In many cases, the ground water is "clean" below the floating xylene layer and can be discharged to the river or the infiltration gallery after the acquisition of proper permits. However, if testing of the discharge water shows concentrations of volatile organics or petroleum hydrocarbons in excess of allowable limits, a treatment system will be required. Alternatively, the discharge water could be disposed of using a licensed waste-water hauler. Until the water can be treated and discharged or removed to a disposal facility, it will have to be stored on-site. During that time, recovery operations will be continuous and a considerable volume of water will be collected. Again it will be necessary to acquire the proper permits required for discharge and/or transport.

If analysis of the water samples from the initial recovery operations indicates that we can treat and discharge the effluent on-site, we propose to employ a carbon adsorption system manufactured by Adsorption Systems, Inc., of Millburn, New Jersey. This treatment system utilizes activated charcoal and "Klensorb 100", a proprietary treatment agent, to remove petroleum hydrocarbon and volatile constituents from effluent passed through the system.

Cost

We propose that the SOS system be installed by our affiliate, Aquifer Systems, Inc. Their detailed proposal is attached. The lump sum cost to furnish and install the SOS system is $48,700. This estimate includes the construction of an insulated protective shed, all electrical work, and all trenching, piping, etc.

Operation and maintenance costs are expected to be on the order of $750 per month. We recommend that weekly inspections be conducted during the first four to six weeks to insure proper operation. The frequency of subsequent inspections will be determined after the first month of operation.

At this time it is not possible to estimate the cost for treatment or disposal of the pumped groundwater utilizing the Adsorption Systems, Inc., equipment. A variety of factors including flow rate, effluent concentration and treatment duration, which cannot be accurately determined until the SOS system is operating, produce major uncertainties in estimating. Experience in a similar situation suggests to us that installation and first-month operational costs for a groundwater treatment system can amount to as much as $10,000. As the design process progresses, we will, of course, keep you fully apprised of budget requirements.

We hope this proposal for a alternative means of xylene removal meets with your approval. Again, we recommend that, to enhance the collection of xylene and gain greater control of the plume, the multi-point SOS system should replace the current single-point skimmer unit. Should you have any questions, please do not hesitate to call. As always, we appreciate the privilege of working with you and look forward to providing continued service.

Sincerely,

GEOENGINEERING, INC.

William W. Dunnell IV
Project Manager

WWD/avm
Enclosure
cc E. Kaup
M. Rodburg

aquifer systems, inc.
100 ford rd. denville, n.j. 07834 (201)625 0634

March 17, 1989

GeoEngineering, Inc.
100 Ford Road
Denville, New Jersey 07834

ATTN: William Dunnell

SUBJ: Oil Recovery System
L.E. Carpenter
Wharton, New Jersey

Dear Bill,

As per your request, we have prepared this proposal for your review.

Scope of Work

In our proposal of June 1987, we had proposed a system that would skim oil and pump water from three wells. The water level would be controlled in one well and the other two wells would be pumped according to the response at the controlled well. The disadvantage of that system was its inability to contol the water level in all three wells so that if one of the wells exhibited slow recharge, the water level in that well would be to low for proper system operation. Since June of 1987 the technology has improved to the point where we can now control the water level in all three wells. This equipment is manufactured by Clean Environment Engineers of Emeryville, California for which we are the exclusive tri-state area distributor. The price quote and system description prepared by Clean Environment Engineers is attached. In addition to installation of this equipment, Aquifer Systems will also provide and install the following:

- 8 x 10 insulated wooden shed.
- Electrical work.
- 10 hp 120 gallon air compressor.
- All trenching, piping, and surface protection between wells.

Cost

The lump sum price to provide and install the equipment noted above is $48,700.00. This prices includes all shipping charges and sales tax. Our terms are net 30 days. Work can begin within two weeks of your notice to proceed.

We trust this proposal is fully responsive to your request. If you have any questions, please call.

Sincerely,

AQUIFER SYSTEMS, INC.

Robert G. Kunzel
Vice President

RGK/ebt

CLEAN ENVIRONMENT ENGINEERS
5835 DOYLE STREET SUITE 102
EMERYVILLE, CA 94608
415-654-4240

March 15, 1989

PRICE QUOTATION

CUSTOMER: Aquifer Systems
PHONE: 201-625-0634 (fax 201-625-8567)
PROJECT: Xylene Site

PREPARED BY: MK Breslin
CONTACT:Bob Kunzel
CEE QUOTE: 89315RB

SOS SYSTEM HW22-SPG THREE WELL SYSTEM HYDROCARBON AND WATER RECOVERY SYSTEM

Design Criteria

Well #: Three Wells
Well Dia: 4"
Well Depth: ?
Site Elevation: 200 ft

Hydrocarbon: Xylene
Depth to Hydrocarbon: 10 ft
Hydrocarbon Thickness: Up To 8 ft
Normal Water Table Depth: 14 ft

TECHNICAL DATA

Skimmer/Pump Capability - 2000 GPD Max Flow

Water Removal Capability - 0 to 7 GPM*

Well I.D.- 2" Min

Well Depth - 22 ft. Max

The SOS SYSTEM HW22-SPG-2 was developed for the underground recovery of fuel/oil spills utilizing water removal to create a groundwater cone of depression, thus enhancing the fuel flow to the recovery well. It is a prepackaged and self-contained system consisting of the following components, requiring only an external compressed air source.

Qty (1) SPG-2 Specific Gravity Skimmer
Qty (1) DDP-1 Double Diaphragm Product Pump
Qty (1) DDP-1 Double Diaphragm Water Pump
Qty (1) Tank Full Shut Off Valve/Sensor for product recovery tank
Qty (1) Inlet Air Source Filter/Regulator System with:
- -5 Micron Filter with Auto Drain Trap
- -Pressure Regulator with Gauge
- -.01 Micron Coalescing Filter with Auto Drain Trap
- -.01 Micron Carbon Filter with Auto Pulse Drain

Qty (1) SOSTC All-Air Logic Control Panel with:
- -Off/On Switch
- -On/Off Indicator
- -High Water Indicator
- -Tank Full Indicator
- -Water Pump Test Push Button
- -Product Pump On/Off Timers
- -Product Pump Test/Tank Full Reset Push Button

* With larger (1.5") pump 15 gpm can be obtained.

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SOS SYSTEM HW22-SPG - THREE WELL SYSTEM HYDROCARBON AND WATER RECOVERY SYSTEM

The following hoses are color coded and equipped with quick connect couplings which will only match its correct mate.

Qty	Ft.	Hose Description
1	25	1/4" Product Suction Hose (Black)
1	25	1/4" Product Discharge Hose (Black)
1	25	3/4" Water Pump Suction Hose (Gray)
1	25	3/4" Water Pump Discharge Hose (Gray)
1	25	1/4" Well Level Sensor Hose (Yellow)
1	25	1/8" Dual Hose, Product Tank Full Shut Off (Gray)
1	25	1/4" Product Tank Fume Return Hose (Gray)
1	25	1/4" Main Air Supply Hose (Blue)

Qty (1) SOS Quick Response Box (QR Box) with integrally mounted and connected filter/regulator assembly, air logic control panel and air/product quick connect couplings.

System Price Each...$ 11,545

ADDITIONAL CAPABILITIES

A.	Three Well Water Drawdown	$ 5,361
B.	Two Extra SPG-2 Skimmers.....	$ 2,800
C.	Extra Product Pump & Manifold, Extra 1" & 1.5" Water Pumps And Fittings.....	$ 3,930
D.	Extra Water, Product & Sensor Hose With Quick Disconnect Fittings And Tees.....	$ 2,575
E.	Down Well Piping To Fit Equipment In 4" SS Well And Footvalves.....	$ 510
F.	Digital Off Timer For Product Pump Control.....	$ 660
G.	Larger QR Box, Fittings & Labor.....	$ 900

Total System Price.... $ 28,281

Lead Time: 1-2 weeks
Warranty: 1 Year Parts and Labor

F.O.B. Emeryville, CA
Quotation Valid For 90 Days

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March 15, 1989

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PROJECT: Xylene Site

PREPARED BY: MK Breslin
CEE QUOTE: 89315RB

SOS SYSTEM HW22-SPG - THREE WELL SYSTEM
HYDROCARBON AND WATER RECOVERY SYSTEM

OPTIONS (Not included in system price)

A. Winterized QR Box .....$ 2,400
Factory installed 400 w heater, 1/60/115 and
QR box lined with dense cell insulation.

For a job this size you might consider installing the compressor, (with a TEFC motor), along with the controls inside an insulated shed and use an explosionproof heater from Graingers (about $700). You will have to check local codes for acceptability of this. This option will use the heat from the compressor to prevent freezing, enclose all equipment from the weather and allow storage for other equipment if the system is expanded.